

## SDN-C Specifications (Single Phase)

| Description                       | Catalog Number                                                                                                                                                                                                                                                               |                                              |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
|                                   | SDN 5–24–100C                                                                                                                                                                                                                                                                | SDN 10–24–100C                               |
| Input                             |                                                                                                                                                                                                                                                                              |                                              |
| Nominal Voltage                   | 115 - 230 Vac                                                                                                                                                                                                                                                                |                                              |
| –AC Range                         | 85 - 264 Vac                                                                                                                                                                                                                                                                 |                                              |
| –DC Range <sup>1</sup>            | 90 - 375 Vdc                                                                                                                                                                                                                                                                 |                                              |
| –Frequency                        | 43 - 67 Hz                                                                                                                                                                                                                                                                   |                                              |
| Nominal Current <sup>2</sup>      | 1.65 - 0.55 A                                                                                                                                                                                                                                                                | 3.2 - 1.0 A                                  |
| –Inrush current max.              | Typ. < 15 A                                                                                                                                                                                                                                                                  | Typ.< 30 A                                   |
| Efficiency (Losses <sup>3</sup> ) | > 88% typ. (14 W)                                                                                                                                                                                                                                                            | > 90% typ. (24 W)                            |
| Power Factor Correction           | Active power factor correction to better than 0.92                                                                                                                                                                                                                           |                                              |
| Output                            |                                                                                                                                                                                                                                                                              |                                              |
| Nominal Voltage <sup>4</sup>      | 24 V (23.5~28.5 Vdc Adj.)                                                                                                                                                                                                                                                    |                                              |
| –Tolerance                        | < ±2 % overall (combination Line, load, time and temperature related changes)                                                                                                                                                                                                |                                              |
| Initial Voltage Setting           | 24.5 V ± 1%                                                                                                                                                                                                                                                                  |                                              |
| –Ripple <sup>5</sup>              | < 50 mVpp                                                                                                                                                                                                                                                                    |                                              |
| PARD                              | PARD (Periodic and Random Deviation) = 100 mV peak-peak max                                                                                                                                                                                                                  |                                              |
| Overvoltage Protection            | > 30.5 but < 33 Vdc, auto recovery                                                                                                                                                                                                                                           |                                              |
| Power Back Immunity               | < 35 V                                                                                                                                                                                                                                                                       |                                              |
| Nominal Current                   | 5 A (120 W)                                                                                                                                                                                                                                                                  | 10 A (240 W)                                 |
| –Peak Current <sup>6</sup>        | 1.5 × Nominal Current for 4 seconds minimum while holding voltage > 20 Vdc                                                                                                                                                                                                   |                                              |
| –Short Circuit Current            | 1.5 x Nominal Current at near zero volts at short circuit condition                                                                                                                                                                                                          |                                              |
| –Current Limit                    | PowerBoost™                                                                                                                                                                                                                                                                  |                                              |
| Parallel Operation                | Switch selectable single unit or parallel unit operation. Units will not be damaged by parallel operation (regardless of switch position setting).                                                                                                                           |                                              |
| Holdup Time                       | >20 ms (Full load, 100 Vac Input @ T <sub>amb</sub> =+25°C) to 95% output voltage                                                                                                                                                                                            |                                              |
| Voltage Fall Time                 | <150 mS from 95% to 10% rated voltage @ full load (T <sub>amb</sub> =+25°C)                                                                                                                                                                                                  |                                              |
| Line and Load Regulation          | < 0.5%                                                                                                                                                                                                                                                                       |                                              |
| General                           |                                                                                                                                                                                                                                                                              |                                              |
| EMC:<br>–Emissions                | EN61000-6-2:2001, EN61000-6-3:2001, Class B EN55011, EN55022 Radiated and Conducted including Annex. A, EN61000-3-2                                                                                                                                                          |                                              |
| –Immunity                         | EN61000-6-1:2001, EN61000-6-2:2001, EN61000-4-2 Level 4, EN61000-4-3 Level 3, EN61000-4-6 Level 3, EN61000-4-4 Level 4 input and level 3 output. EN61000-4-5 Isolation class 4, EN61000-4-11, IEC 61000-4-34 voltage dip immunity standard                                   |                                              |
| Temperature <sup>7</sup>          | Storage: -40°C to + 85°C, Operation -25°C to +60°C full power, with linear derating to half power from 60 to 70°C (Convection cooling, no forced air required).<br>Operation up to 50% load permissible with sideways or front side up mounting orientation.                 |                                              |
| MTBF <sup>8</sup>                 | > 550,000 hrs                                                                                                                                                                                                                                                                |                                              |
| Warranty                          | 5 Year Limited Warranty                                                                                                                                                                                                                                                      |                                              |
| General Protection/<br>Safety     | Protected against continuous short -circuit, continuous overload, continuous open circuit.<br>Protection Class 1 (IEC536), degree of protection IP20 (IEC60529) Safe low voltage: SELV (acc. IEC60950-1)                                                                     |                                              |
| Status Indicators                 | Visual: 3 status LEDs (Input, Output, Alarm)<br>Relay: N.O. contact rated 200ma/50 Vdc                                                                                                                                                                                       |                                              |
| Installation                      |                                                                                                                                                                                                                                                                              |                                              |
| Fusing –Input                     | Internally fused                                                                                                                                                                                                                                                             |                                              |
| –Output                           | Outputs are capable of providing high currents for short periods of time for inductive load startup or switching. Fusing may be required for wire/loads if 2x Nominal O/P current rating cannot be tolerated. Continuous current overload allows for reliable fuse tripping. |                                              |
| Mounting                          | Simple snap-on to DIN TS35/7.5 or TS35/15 rail system.                                                                                                                                                                                                                       |                                              |
| Connections                       | Input: Screw terminals, connector size range: 16-10 AWG (1.5-6 mm²) for solid conductors. Screw torque: 4.4 lb-inch (~ 50 N-cm).<br>Output: Two terminals per output, connector size range: 16-10 AWG (1.5-6 mm²) for solid conductors. Screw torque: 7 lb-inch (~ 80 N-cm). |                                              |
| Case                              | Fully enclosed metal housing with fine ventilation grid to keep out small parts.                                                                                                                                                                                             |                                              |
| –Free Space                       | 25 mm above and below, 10 mm left and right, 15 mm in front                                                                                                                                                                                                                  |                                              |
| H x W x D inches in (mm)          | 4.85 × 1.97 × 4.36<br>(123.0 × 50.0 × 110.0)                                                                                                                                                                                                                                 | 4.85 × 2.36 × 4.36<br>(123.0 × 60.0 × 110.0) |
| Weight lbs (kg)                   | 1.1 (0.50)                                                                                                                                                                                                                                                                   | 1.7 (0.80)                                   |

1. Not UL listed for DC input.

2. Input current ratings are conservatively specified with low input, worst case efficiency and power factor.

3. Losses are heat dissipation in watts at full load, nominal input line.

4. 24-28 Vdc adjustable guaranteed at full load.

5. Ripple/noise is stated as typical values when measured with a 20 MHz, bandwidth scope and 50 Ohm resistor.

6. Peak current is calculated at 24 Volt levels.

7. Contact tech support for operation at -25°C.

8. Demonstrated through extended life test.

## SDN-C Specifications (Single Phase)

| Description                       | Catalog Number                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                  |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                   | SDN 20–24–100C                                                                                                                                                                                                                                                               | SDN 40–24–100C                                                                                                                                                                                                                                                                                   |
| Input                             |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                  |
| Nominal Voltage                   | 115 - 230 Vac                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                  |
| –AC Range                         | 85 - 264 Vac                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                  |
| –DC Range <sup>1</sup>            | 90 - 375 Vdc                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                  |
| –Frequency                        | 43 - 67 Hz                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                  |
| Nominal Current <sup>2</sup>      | 6 - 3 A                                                                                                                                                                                                                                                                      | 12 - 4 A                                                                                                                                                                                                                                                                                         |
| –Inrush current max.              | < 40 A                                                                                                                                                                                                                                                                       | Typ. <60 A                                                                                                                                                                                                                                                                                       |
| Efficiency (Losses <sup>3</sup> ) | > 92% (38 W)                                                                                                                                                                                                                                                                 | > 93 % (67 W)                                                                                                                                                                                                                                                                                    |
| Power Factor Correction           | Active power factor correction to better than 0.92                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                  |
| Output                            |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                  |
| Nominal Voltage <sup>4</sup>      | 24 V (23.5~28.5 Vdc Adj.)                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                  |
| –Tolerance                        | < ±2 % overall (combination Line, load, time and temperature related changes)                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                  |
| Initial Voltage Setting           | 24.5 V ± 1%                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                  |
| –Ripple <sup>5</sup>              | <100 mVpp                                                                                                                                                                                                                                                                    | < 100 mVpp                                                                                                                                                                                                                                                                                       |
| PARD                              | PARD (Periodic and Random Deviation) = 100 mV peak-peak max                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                  |
| Overvoltage Protection            | > 30.5 but < 33 Vdc, auto recovery                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                  |
| Power Back Immunity               | < 35 V                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                  |
| Nominal Current                   | 20 A (480 W)                                                                                                                                                                                                                                                                 | 40 A (960 W)                                                                                                                                                                                                                                                                                     |
| –Peak Current <sup>6</sup>        | 1.5 × Nominal Current for 4 seconds minimum while holding voltage > 20 Vdc                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                  |
| –Short Circuit Current            | 1.5 x Nominal Current at near zero volts at short circuit condition                                                                                                                                                                                                          | 1.8 x Nominal Current at or near zero volts at short circuit condition                                                                                                                                                                                                                           |
| –Current Limit                    | PowerBoost™                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                  |
| Parallel Operation <sup>7</sup>   | Switch selectable single unit or parallel unit operation. Units will not be damaged by parallel operation (regardless of switch position setting).                                                                                                                           | Active Paralleling                                                                                                                                                                                                                                                                               |
| Holdup Time                       | >20 mS (Full load, 100 Vac Input @ T <sub>amb</sub> =+25°C) to 95% output voltage                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                  |
| Voltage Fall Time                 | <150 mS from 95% to 10% rated voltage @ full load (T <sub>amb</sub> =+25°C)                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                  |
| Line and Load Regulation          | < 0.5%                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                  |
| General                           |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                  |
| EMC:<br>–Emissions                | EN61000-6-2:2001, EN61000-6-3:2001, Class B EN55011, EN55022<br>Radiated and Conducted including Annex. A, EN61000-3-2                                                                                                                                                       | EN61000-6-3, EN61000-6-4, Class B EN55011, EN55022<br>Radiated and Conducted including Annex A, EN61000-3-2, EN61000-3-3                                                                                                                                                                         |
| –Immunity                         | EN61000-6-1:2001, EN61000-6-2:2001, EN61000-4-2 Level 4, EN61000-4-3 Level 3, EN61000-4-6 Level 3, EN61000-4-4 Level 4 input and level 3 output. EN61000-4-5 Isolation class 4, EN61000-4-11, IEC 61000-4-34 voltage dip immunity standard                                   | EN61000-6-1, EN61000-6-2, EN61000-4-2 Level 4, EN61000-4-3 Level 3, EN61000-4-4 Level 4 input and Level 3 output, EN61000-4-5 Installation Class 4, EN61000-4-6 Level 3, EN61000-4-8, EN61000-4-11, SEMI F47 Sag Immunity, Transient protection according to VDE 0160/W2 over entire load range. |
| Temperature <sup>8</sup>          | Storage: -40°C to + 85°C, Operation -25°C to +60°C full power, with linear derating to half power from 60 to 70°C (Convection cooling, no forced air required). Operation up to 50% load permissible with sideways or front side up mounting orientation.                    |                                                                                                                                                                                                                                                                                                  |
| MTBF <sup>9</sup>                 | > 450,000 hrs                                                                                                                                                                                                                                                                | > 500,000 hours demonstrated                                                                                                                                                                                                                                                                     |
| Warranty                          | 5 Year Limited Warranty                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                  |
| General Protection/Safety         | Protected against continuous short -circuit, continuous overload, continuous open circuit. Protection Class 1 (IEC536), degree of protection IP20 (IEC60529) Safe low voltage: SELV (acc. IEC60950-1)                                                                        |                                                                                                                                                                                                                                                                                                  |
| Status Indicators                 | Visual: 3 status LEDs (Input, Output, Alarm)<br>Relay: N.O. contact rated 200ma/50 Vdc                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                  |
| Installation                      |                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                  |
| Fusing –Input                     | Internally fused                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                  |
| –Output                           | Outputs are capable of providing high currents for short periods of time for inductive load startup or switching. Fusing may be required for wire/loads if 2x Nominal O/P current rating cannot be tolerated. Continuous current overload allows for reliable fuse tripping. |                                                                                                                                                                                                                                                                                                  |
| Mounting                          | Simple snap-on to DIN TS35/7.5 or TS35/15 rail system.                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                  |
| Connections <sup>10</sup>         | Input: Screw terminals, connector size range: 16-10 AWG (1.5-6 mm²) for solid conductors. Screw Torque: 4.4 lb-in (~ 50 N-cm).<br>Output: Two terminals per output, connector size range: 16-10 AWG (1.5-6 mm²) for solid conductors. Screw Torque: 7 lb-inch (~ 80 N-cm)    | Input: Screw terminals, connector size range: 16-10 AWG (1.5-6 mm²) for solid conductors. Screw Torque: 4.4 lb-inch (~ 50 N-cm).<br>Output: Two terminals per output, connector size range: 10-6 AWG (6-14 mm²) for solid conductors. Screw Torque: 15.6 lb-inch (~ 176 N-cm)                    |
| Case                              | Fully enclosed metal housing with fine ventilation grid to keep out small parts.                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                  |
| –Free Space                       | 25 - 40 mm above and below, 10 mm left and right, 15 mm in front                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                  |
| H x W x D inches in (mm)          | 4.85 x 3.42 x 4.98 (123.0 x 87.0 x 127.0)                                                                                                                                                                                                                                    | 4.85 x 7.09 x 4.81 (123.0 x 180.0 x 122.0)                                                                                                                                                                                                                                                       |
| Weight lbs (kg)                   | 2.6 (1.20)                                                                                                                                                                                                                                                                   | 6.0 (2.75)                                                                                                                                                                                                                                                                                       |

1. Not UL listed for DC input.

2. Input current ratings are conservatively specified with low input, worst case efficiency and power factor.

3. Losses are heat dissipation in watts at full load, nominal input line.

4. 24-28 Vdc adjustable guaranteed at full load.

5. Ripple/noise is stated as typical values when measured with a 20 MHz, bandwidth scope and 50 Ohm resistor.

6. Peak current is calculated at 24 Volt levels.

7. All models except the 40amp unit are capable of parallel operation by use of a jumper pin, accessible by the end user. 40 amp unit will have active current sharing signal.

8. Contact tech support for operation at -25°C.

9. Demonstrated through extended life test.

10. SDN 40-24-100C only = Output signaling terminal block features (Shut down, Power Good, Current Monitor, Current Balance, signal GND).